REMARKS

Claims 2, 3, and 10 have been canceled. Claims 1, 7, 8, and 11 have been amended. Claims 1, 4 through 9, 11, and 12 remain in the application.

Claims 1, 4, 5, 8, and 10 through 12 were rejected under 35 U.S.C. § 103 as being unpatentable over Tong et al. (U.S. Patent No. 6,226,568) in view of Vandenburgh (U.S. Patent No. 4,859,865) and further in view of Marx (U.S. Patent No. 6,262,843). Applicants respectfully traverse this rejection.

U.S. Patent No. 6,226,568 to Tong et al. discloses a method of balancing paint booth air flows. Low air flows sensors 52 may be used adjacent each cross-flow damper 50, the sensor providing accuracy in signaling air flow direction and air flow velocity. Digital output of the sensors is sent to a microprocessor 53 which in turn converts the information for use by a programmable logic controller that adjusts the cross-flow dampers and venturi gap width. An operator interface with the controller can be attained through use of a <u>desktop</u> terminal personal computer 55 or through a remote terminal unit. Tong et al. does <u>not</u> disclose a portable airflow sensor to measure airflows in the paint booth and a portable computer connected to the airflow sensor for collecting data from the airflow sensor. Tong et al. also does <u>not</u> disclose the computer having a first database of optimal control settings for storing information of last optimal commands and last optimal sensitivity model, a second database for storing information of air velocities and VFD/damper commands, and a sensitivity model for the paint booth.

U.S. Patent No. 4,859,865 to Vandenburgh discloses a tamper resistant radon detector system. A test site air environment detection means for detecting a change in air proximal to a housing location within a test site is either in the form of temperature sensors 34 and 36 respectively, or alternatively inclusion of an air flow sensor 40 positioned within the test site. A suitable air flow sensor is that identified as the Kurz Portable Air Velocity Meter.

Vandenburgh does <u>not</u> disclose a portable computer connected to an airflow sensor for collecting data from the airflow sensor. Vandenburgh also does <u>not</u> disclose the computer having a first database of optimal control settings for storing information of last optimal commands and last optimal sensitivity model, a second database for storing information of air velocities and VFD/damper commands, and a sensitivity model for the paint booth.

U.S. Patent No. 6,262,843 to Marx discloses a polarizing privacy system for use with a visual display terminal. Generally, a privacy system 10 includes a terminal 20 disposed within a user area 50, a barrier assembly 40 that separates the user area 50 from an external area 30, and first and second filters, 60 and 44, respectively, for preventing an outside observer 4 in the external area 30 from viewing information accessed by a user 2. The terminal 20 may also be a portable computer (e.g., notebook computer) that is provided by the user 2. Marx does <u>not</u> disclose a portable airflow sensor to measure airflows in the paint booth. Marx also does <u>not</u> disclose the computer having a first database of optimal control settings for storing information of last optimal commands and last optimal sensitivity model, a second database for storing information of air velocities and VFD/damper commands, and a sensitivity model for the paint booth.

In contradistinction, claim 1, as amended, clarifies the invention claimed as a portable advisory system for balancing airflows in a paint booth including a portable airflow sensor to measure airflows in the paint booth. The portable advisory system also includes a portable computer connected to the airflow sensor for collecting data from the airflow sensor and guiding an operator through a process of adjusting multiple fan speeds and duct dampers to achieve desired airflows. The computer has a first database of optimal control settings for storing information of last optimal commands and last optimal sensitivity model, a second database for

storing information of air velocities and VFD/damper commands, and a sensitivity model for the paint booth.

The United States Court of Appeals for the Federal Circuit (CAFC) has stated in determining the propriety of a rejection under 35 U.S.C. § 103, it is well settled that the obviousness of an invention cannot be established by combining the teachings of the prior art absent some teaching, suggestion or incentive supporting the combination. See In re Fine, 837 F.2d 1071, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988); Ashland Oil, Inc. v. Delta Resins & Refractories, Inc., 776 F.2d 281, 227 U.S.P.Q. 657 (Fed. Cir. 1985); ACS Hospital Systems, Inc. v. Montefiore Hospital, 732 F.2d 1572, 221 U.S.P.Q. 929 (Fed. Cir. 1984). The law followed by our court of review and the Board of Patent Appeals and Interferences is that "[a] prima facie case of obviousness is established when the teachings from the prior art itself would appear to have suggested the claimed subject matter to a person of ordinary skill in the art." In re Rinehart, 531 F.2d 1048, 1051, 189 U.S.P.Q. 143, 147 (C.C.P.A. 1976). See also In re Lalu, 747 F.2d 703, 705, 223 U.S.P.Q. 1257, 1258 (Fed. Cir. 1984) ("In determining whether a case of prima facie obviousness exists, it is necessary to ascertain whether the prior art teachings would appear to be sufficient to one of ordinary skill in the art to suggest making the claimed substitution or other modification.")

As to the differences between the prior art and the claims at issue, Tong et al. '568 merely discloses a method of balancing paint booth air flows in which a digital output of air flows sensors is sent to a microprocessor which converts the information for use by a programmable logic controller with an operator interface through use of a desktop terminal personal computer or through a remote terminal unit. Tong et al. '568 lacks a portable airflow sensor to measure airflows in the paint booth and a portable computer connected to the airflow sensor for collecting data from the airflow sensor. In Tong et al. '568, the air flow sensors 52 are

permanently mounted and not portable. In addition, Tong et al. '568 uses on-line control via a desktop computer 55, which is not a portable computer. Further, Tong et al. "568 lacks the computer having a first database of optimal control settings for storing information of last optimal commands and last optimal sensitivity model, a second database for storing information of air velocities and VFD/damper commands, and a sensitivity model for the paint booth.

Vandenburgh '865 merely discloses a tamper resistant radon detector system having a test site air environment detection means for detecting a change in air proximal to a housing location within a test site in the form of an air flow sensor positioned within the test site, which is a portable air velocity meter. Vandenburgh '865 lacks a portable computer connected to an airflow sensor for collecting data from the airflow sensor. In Vandenburgh '865, the air flow sensor is not used to measure airflows in a paint booth. Vandenburgh '865 also lacks the computer having a first database of optimal control settings for storing information of last optimal commands and last optimal sensitivity model, a second database for storing information of air velocities and VFD/damper commands, and a sensitivity model for the paint booth.

Marx '843 merely discloses a polarizing privacy system for use with a visual display terminal in which a terminal disposed within a user area may be a portable computer (e.g., notebook computer) that is provided by the user. Marx '843 lacks a portable airflow sensor to measure airflows in a paint booth. Marx '843 also lacks the computer having a first database of optimal control settings for storing information of last optimal commands and last optimal sensitivity model, a second database for storing information of air velocities and VFD/damper commands, and a sensitivity model for the paint booth. There is no suggestion or motivation in the art for combining Tong et al. '568, Vandenburgh '865, and Marx '843 together.

There is absolutely no teaching of a level of skill in the paint booth art that a portable advisory system for balancing air flows in a paint booth includes a portable airflow

sensor to measure airflows in the paint booth and a portable computer connected to the airflow sensor for collecting data from the airflow sensor. The Examiner has previously admitted that Tong et al. '568 does not expressly disclose a portable airflow sensor and a portable computer. However, without a factual basis, the Examiner determines that the sensors and computer of Tong et al. '568 could be made portable by substituting the air flow sensor of Vandenburgh '865 and the portable computer of Marx '843. The Examiner may not, because he/she doubts that the invention is patentable, resort to speculation, unfounded assumptions or hindsight reconstruction to supply deficiencies in the factual basis. See In re Warner, 379 F. 2d 1011, 154 U.S.P.Q. 173 (C.C.P.A. 1967). However, such a combination would still be deficient because it lacks the computer having a first database of optimal control settings for storing information of last optimal commands and last optimal sensitivity model, a second database for storing information of air velocities and VFD/damper commands, and a sensitivity model for the paint booth.

The present invention sets forth a unique and non-obvious combination of a portable advisory system using a handheld acoustic anemometer or airflow sensor to measure airflows in a paint booth that are output to a laptop/palmtop computer that collects data and guides the operator through the process of adjusting multiple fan speeds and duct dampers to achieve the desired airflows in the paint booth in a relatively short time interval without adding costly automation equipment. The references, if combinable, fail to teach or suggest the combination of a portable advisory system for balancing air flows in a paint booth including a portable airflow sensor to measure airflows in the paint booth and a portable computer connected to the airflow sensor for collecting data from the airflow sensor with the computer having a first database of optimal control settings for storing information of last optimal commands and last optimal sensitivity model, a second database for storing information of air velocities and VFD/damper commands, and a sensitivity model for the paint booth as claimed by Applicants.

The Examiner has failed to establish a case of prima facie obviousness. Therefore, it is respectfully submitted that claim 1 and the claims dependent therefrom are allowable over the rejection under 35 U.S.C. § 103.

As to claim 8, claim 8, as amended, clarifies the invention claimed as a method of balancing airflows in a paint booth. The method includes the steps of providing a portable airflow sensor to measure airflows in the paint booth, providing a portable computer, and connecting the portable computer to the air flow sensor. The computer has a first database of optimal control settings for storing information of last optimal commands and last optimal sensitivity model and a second database for storing information of air velocities and VFD/damper commands. The method also includes the steps of measuring the velocity of the airflows in the paint booth with the airflow sensor, storing the measured airflows in the second database and computing a mean squared error. The method further includes the steps of updating a sensitivity model (J) of the paint booth with the measured velocity of the airflows based on the mean squared error to balance the airflows in the paint booth.

As to the differences between the prior art and the claims at issue, Tong et al. '568 merely discloses a method of balancing paint booth air flows in which a digital output of air flows sensors is sent to a microprocessor which converts the information for use by a programmable logic controller with an operator interface through use of a desktop terminal personal computer or through a remote terminal unit. Tong et al. '568 lacks providing a portable airflow sensor to measure airflows in the paint booth, providing a portable computer, and connecting the portable computer to the airflow sensor. Tong et al. '568 also lacks the computer having a first database of optimal control settings for storing information of last optimal commands and last optimal sensitivity model and a second database for storing information of air velocities and VFD/damper commands. Tong et al. '568 further lacks measuring the velocity of

the airflows in the paint booth with the airflow sensor, storing the measured airflows in a database, computing a mean squared error, and updating a sensitivity model (J) of the paint booth with the measured velocity of the airflows based on the mean squared error to balance the airflows in the paint booth. In Tong et al. '568, the air flow sensors 52 are permanently mounted and not portable. In addition, Tong et al. '568 uses on-line control via a desktop computer 55, which is not a portable computer.

Vandenburgh '865 merely discloses a tamper resistant radon detector system having a test site air environment detection means for detecting a change in air proximal to a housing location within a test site in the form of an air flow sensor positioned within the test site, which is a portable air velocity meter. Vandenburgh '865 lacks a portable computer connected to an airflow sensor for collecting data from the airflow sensor. In Vandenburgh '865, the air flow sensor is not used to measure airflows in a paint booth. Vandenburgh '865 also lacks the computer having a first database of optimal control settings for storing information of last optimal commands and last optimal sensitivity model and a second database for storing information of air velocities and VFD/damper commands. Vandenburgh '865 further lacks computing a mean squared error and updating a sensitivity model (J) of a paint booth with measured velocity of airflows based on the mean squared error to balance the airflows in the paint booth.

Marx '843 merely discloses a polarizing privacy system for use with a visual display terminal in which a terminal disposed within a user area may be a portable computer (e.g., notebook computer) that is provided by the user. Marx '843 lacks a portable airflow sensor to measure airflows in a paint booth. Marx '843 also lacks the computer having a first database of optimal control settings for storing information of last optimal commands and last optimal sensitivity model and a second database for storing information of air velocities and VFD/damper

commands. Marx '843 further lacks computing a mean squared error and updating a sensitivity model (J) of a paint booth with measured velocity of airflows based on the mean squared error to balance the airflows in the paint booth. There is no suggestion or motivation in the art for combining Tong et al. '568, Vandenburgh '865, and Marx '843 together.

Even if Tong et al. '568 could be modified, it does not teach providing a portable airflow sensor to measure airflows in the paint booth, providing a portable computer and connecting the portable computer to the airflow sensor, computing a mean squared error, and updating a sensitivity model (J) of the paint booth with the measured velocity of the airflows based on the mean squared error to balance the airflows in the paint booth. The references, if combinable, fail to teach or suggest the combination of a method of balancing airflows in a paint booth including the steps of providing a portable airflow sensor to measure airflows in the paint booth, providing a portable computer, connecting the portable computer to the air flow sensor, the computer having a first database of optimal control settings for storing information of last optimal commands and last optimal sensitivity model and a second database for storing information of air velocities and VFD/damper commands, measuring the velocity of the airflows in the paint booth with the airflow sensor, storing the measured airflows in the second database, computing a mean squared error, and updating a sensitivity model (J) of the paint booth with the measured velocity of the airflows based on the mean squared error to balance the airflows in the paint booth as claimed by Applicants.

Further, the CAFC has held that "[t]he mere fact that prior art could be so modified would not have made the modification obvious unless the prior art suggested the desirability of the modification". In re Gordon, 733 F.2d 900, 902, 221 U.S.P.Q. 1125, 1127 (Fed. Cir. 1984). The Examiner has failed to show how the prior art suggested the desirability of modification to achieve Applicants' invention. Thus, the Examiner has failed to establish a case

of prima facie obviousness. Therefore, it is respectfully submitted that claim 8 and the claims dependent therefrom are allowable over the rejection under 35 U.S.C. § 103.

Claims 6 and 7 were rejected under 35 U.S.C. § 103 as being unpatentable over Tong et al. '568 in view of Vandenburgh '865 and further in view of Marx '843 and further in view of Rein et al. (U.S. Patent No. 5,341,988). Applicants respectfully traverse this rejection for the same reasons given above to claim 1.

Claims 1 through 5, 8, and 9 were rejected under 35 U.S.C. § 103 as being unpatentable over Tong et al. (U.S. Patent No. 6,146,264) in view of Vandenburgh '865 and further in view of Marx '843. Applicants respectfully traverse this rejection.

U.S. Patent No. 6,146,264 to Tong et al. discloses a paint booth air flow control system. Fans and dampers are controlled by flow velocity sensors 60 located at partitions 26. A computer 88 includes a co-processor 76 containing an algorithm that is designed to drive the fans and dampers toward a desired operating mode represented by arrows 52. The computer 88 further includes a programmable logic controller 78 that receives signals from the sensors 60 and delivers control signals to fan motors and damper motors. Tong et al. does not disclose a portable airflow sensor to measure airflows in the paint booth and a portable computer connected to the airflow sensor for collecting data from the airflow sensor. Tong et al. also does not disclose the computer having a first database of optimal control settings for storing information of last optimal commands and last optimal sensitivity model, a second database for storing information of air velocities and VFD/damper commands, and a sensitivity model for the paint booth.

In contradistinction, claim 1, as amended, clarifies the invention claimed as a portable advisory system for balancing airflows in a paint booth including a portable airflow sensor to measure airflows in the paint booth. The portable advisory system also includes a

portable computer connected to the airflow sensor for collecting data from the airflow sensor and guiding an operator through a process of adjusting multiple fan speeds and duct dampers to achieve desired airflows. The computer has a first database of optimal control settings for storing information of last optimal commands and last optimal sensitivity model, a second database for storing information of air velocities and VFD/damper commands, and a sensitivity model for the paint booth.

As to the differences between the prior art and the claims at issue, Tong et al. '264 merely discloses a paint booth air flow control system in which a computer includes a programmable logic controller that receives signals from flow velocity sensors and delivers control signals to fan motors and damper motors. Tong et al. '264 lacks a portable airflow sensor to measure airflows in the paint booth and a portable computer connected to the airflow sensor for collecting data from the airflow sensor. Tong et al. '264 also lacks the computer having a first database of optimal control settings for storing information of last optimal commands and last optimal sensitivity model, a second database for storing information of air velocities and VFD/damper commands, and a sensitivity model for the paint booth. In Tong et al. '264, the sensors 60 are permanently mounted and not portable. Also, Tong et al. '264 uses on-line control via the co-processor 76, which is not a portable computer.

Vandenburgh '865 merely discloses a tamper resistant radon detector system having a test site air environment detection means for detecting a change in air proximal to a housing location within a test site in the form of an air flow sensor positioned within the test site, which is a portable air velocity meter. Vandenburgh '865 lacks a portable computer connected to an airflow sensor for collecting data from the airflow sensor. In Vandenburgh '865, the air flow sensor is not used to measure airflows in a paint booth. Vandenburgh '865 also lacks the computer having a first database of optimal control settings for storing information of last

optimal commands and last optimal sensitivity model, a second database for storing information of air velocities and VFD/damper commands, and a sensitivity model for the paint booth.

Marx '843 merely discloses a polarizing privacy system for use with a visual display terminal in which a terminal disposed within a user area may be a portable computer (e.g., notebook computer) that is provided by the user. Marx '843 lacks a portable airflow sensor to measure airflows in a paint booth. Marx '843 also lacks the computer having a first database of optimal control settings for storing information of last optimal commands and last optimal sensitivity model, a second database for storing information of air velocities and VFD/damper commands, and a sensitivity model for the paint booth. There is no suggestion or motivation in the art for combining Tong et al. '264, Vandenburgh '865, and Marx '843 together.

While Tong et al. '264 discloses a paint booth air flow control system, it does not teach or suggest that the airflow sensor is portable to measure airflows in the paint booth and that the computer is portable for collecting data from the airflow sensor. The Examiner has previously admitted on page 9 of the Office Action that Tong et al. '264 does not expressly disclose a portable airflow sensor and a portable computer. However, without a factual basis, the Examiner determines that the sensors and computer of Tong et al. '264 could be made portable by substituting the air flow sensor of Vandenburgh '865 and the portable computer of Marx '843. Thus, the references fail to teach a level of skill in the art of paint booths that a portable advisory system can be provided for balancing air flows in a paint booth to include a portable airflow sensor to measure airflows in the paint booth and a portable computer connected to the airflow sensor for collecting data from the airflow sensor.

The claimed invention is novel and unobvious because the portable advisory system uses a handheld acoustic anemometer or airflow sensor to measure airflows in a paint booth that are output to a laptop/palmtop computer that collects data and guides the operator

through the process of adjusting multiple fan speeds and duct dampers to achieve the desired airflows in the paint booth in a relatively short time interval without adding costly automation equipment. The references, if combinable, fail to teach or suggest the combination of a portable advisory system for balancing air flows in a paint booth including a portable airflow sensor to measure airflows in the paint booth and a portable computer connected to the airflow sensor for collecting data from the airflow sensor, the computer having a first database of optimal control settings for storing information of last optimal commands and last optimal sensitivity model, a second database for storing information of air velocities and VFD/damper commands, and a sensitivity model for the paint booth as claimed by Applicants. Thus, the Examiner has failed to establish a case of prima facie obviousness. Therefore, it is respectfully submitted that claim 1 and the claims dependent therefrom are allowable over the rejection under 35 U.S.C. § 103.

As to claim 8, claim 8, as amended, clarifies the invention claimed as a method of balancing airflows in a paint booth. The method includes the steps of providing a portable airflow sensor to measure airflows in the paint booth, providing a portable computer, and connecting the portable computer to the air flow sensor. The computer has a first database of optimal control settings for storing information of last optimal commands and last optimal sensitivity model and a second database for storing information of air velocities and VFD/damper commands. The method also includes the steps of measuring the velocity of the airflows in the paint booth with the airflow sensor, storing the measured airflows in the second database and computing a mean squared error. The method further includes the steps of updating a sensitivity model (J) of the paint booth with the measured velocity of the airflows based on the mean squared error to balance the airflows in the paint booth.

As to the differences between the prior art and the claims at issue, Tong et al. '264 merely discloses a paint booth air flow control system in which a computer includes a

programmable logic controller that receives signals from flow velocity sensors and delivers control signals to fan motors and damper motors. Tong et al. '264 lacks providing a portable airflow sensor to measure airflows in the paint booth, providing a portable computer, and connecting the portable computer to the airflow sensor. Tong et al. '264 also lacks the computer having a first database of optimal control settings for storing information of last optimal commands and last optimal sensitivity model and a second database for storing information of air velocities and VFD/damper commands. Tong et al. '264 further lacks measuring the velocity of the airflows in the paint booth with the airflow sensor, storing the measured airflows in a database, computing a mean squared error, and updating a sensitivity model (J) of the paint booth with the measured velocity of the airflows based on the mean squared error to balance the airflows in the paint booth. In Tong et al. '264, the sensors 60 are permanently mounted and not portable. Also, Tong et al. '264 uses on-line control via the co-processor 76, which is not a portable computer.

Vandenburgh '865 merely discloses a tamper resistant radon detector system having a test site air environment detection means for detecting a change in air proximal to a housing location within a test site in the form of an air flow sensor positioned within the test site, which is a portable air velocity meter. Vandenburgh '865 lacks a portable computer connected to an airflow sensor for collecting data from the airflow sensor. Vandenburgh '865 also lacks the computer having a first database of optimal control settings for storing information of last optimal commands and last optimal sensitivity model and a second database for storing information of air velocities and VFD/damper commands. Vandenburgh '865 further lacks measuring the velocity of the airflows in the paint booth with the airflow sensor, storing the measured airflows in a database, computing a mean squared error, and updating a sensitivity model (J) of the paint booth with the measured velocity of the airflows based on the mean

squared error to balance the airflows in the paint booth. In Vandenburgh '865, the air flow sensor is not used to measure airflows in a paint booth.

Marx '843 merely discloses a polarizing privacy system for use with a visual display terminal in which a terminal disposed within a user area may be a portable computer (e.g., notebook computer) that is provided by the user. Marx '843 lacks a portable airflow sensor to measure airflows in a paint booth. Marx '843 also lacks the computer having a first database of optimal control settings for storing information of last optimal commands and last optimal sensitivity model and a second database for storing information of air velocities and VFD/damper commands. Marx '843 further lacks measuring the velocity of the airflows in the paint booth with the airflow sensor, storing the measured airflows in a database, computing a mean squared error, and updating a sensitivity model (J) of the paint booth with the measured velocity of the airflows based on the mean squared error to balance the airflows in the paint booth. There is no suggestion or motivation in the art for combining Tong et al. '264, Vandenburgh '865, and Marx '843 together.

The references, if combinable, fail to teach or suggest the combination of a method of balancing airflows in a paint booth including the steps of providing a portable airflow sensor to measure airflows in the paint booth, providing a portable computer, connecting the portable computer to the air flow sensor, the computer having a first database of optimal control settings for storing information of last optimal commands and last optimal sensitivity model and a second database for storing information of air velocities and VFD/damper commands, measuring the velocity of the airflows in the paint booth with the airflow sensor, storing the measured airflows in the second database, computing a mean squared error, and updating a sensitivity model (J) of the paint booth with the measured velocity of the airflows based on the mean squared error to balance the airflows in the paint booth as claimed by Applicants. The

claimed invention is novel and unobvious because the method automatically updates a simplified model of the airflows in a paint booth and uses this model to iteratively calculate the optimum adjustments to the fan speed and/or duct damper settings by minimizing the mean squared error between current and target airflows. Thus, the Examiner has failed to establish a case of prima facie obviousness. Therefore, it is respectfully submitted that claim 8 and the claims dependent therefrom are allowable over the rejection under 35 U.S.C. § 103.

Claims 6 and 7 were rejected under 35 U.S.C. § 103 as being unpatentable over Tong et al. '264 in view of Vandenburgh '865 and further in view of Marx '843 and further in view of Rein et al. (U.S. Patent No. 5,341,988). Applicants respectfully traverse this rejection for the same reasons given above to claim 1.

Claim 1 was rejected under 35 U.S.C. § 103 as being unpatentable over Ayer (U.S. Patent No. 5,643,077). Applicants respectfully traverse this rejection.

U.S. Patent No. 5,643,077 to Ayer discloses a continually optimize, variable flow rate ventilation system. A monitor 19 measures concentrations in a recirculation duct 16 upstream of where a fresh make-up air 17 is introduced and continuously analyzes the concentration in a recirculation stream 20. The output from the monitor 19 is sent to a central computer 22 via electrical interface, fiber optic cable, or equivalent 21. The central computer 22 controls the recirculation flow rate via a fresh make-up air intake damper 23 and a recirculation damper 24. Ayer '077 does not disclose a portable airflow sensor to measure airflows in the paint booth and a portable computer connected to the airflow sensor for collecting data from the airflow sensor. Ayer '077 also does not disclose the computer having a first database of optimal control settings for storing information of last optimal commands and last optimal sensitivity model, a second database for storing information of air velocities and VFD/damper commands, and a sensitivity model for the paint booth.

In contradistinction, claim 1, as amended, clarifies the invention claimed as a portable advisory system for balancing airflows in a paint booth including a portable airflow sensor to measure airflows in the paint booth. The portable advisory system also includes a portable computer connected to the airflow sensor for collecting data from the airflow sensor and guiding an operator through a process of adjusting multiple fan speeds and duct dampers to achieve desired airflows. The computer has a first database of optimal control settings for storing information of last optimal commands and last optimal sensitivity model, a second database for storing information of air velocities and VFD/damper commands, and a sensitivity model for the paint booth.

As to the differences between the prior art and the claims at issue, Ayer '077 merely discloses a continually optimize, variable flow rate ventilation system in which a monitor measures concentrations in a recirculation duct and the output from the monitor is sent to a central computer via electrical interface, fiber optic cable, or equivalent, which controls the recirculation flow rate via dampers. Ayer '077 lacks a portable airflow sensor to measure airflows in the paint booth and a portable computer connected to the airflow sensor for collecting data from the airflow sensor. Ayer '077 also lacks the computer having a first database of optimal control settings for storing information of last optimal commands and last optimal sensitivity model, a second database for storing information of air velocities and VFD/damper commands, and a sensitivity model for the paint booth. Ayer '077 uses on-line control via a central computer 22, which is not a portable computer. There is no suggestion or motivation in the art for modifying Ayer '077.

There is absolutely no teaching of a level of skill in the paint booth art that a portable advisory system for balancing air flows in a paint booth includes a portable airflow sensor to measure airflows in the paint booth and a portable computer connected to the airflow

sensor for collecting data from the airflow sensor. The Examiner has previously admitted that Ayer '077 does not expressly disclose a portable airflow sensor and a portable computer. However, without a factual basis, the Examiner determines that the sensors and computer of Ayer '077 could be made portable. The Examiner may not, because he/she doubts that the invention is patentable, resort to speculation, unfounded assumptions or hindsight reconstruction to supply deficiencies in the factual basis. See In re Warner, 379 F. 2d 1011, 154 U.S.P.Q. 173 (C.C.P.A. 1967).

Even if this reference could be modified, it fails to teach a portable airflow sensor to measure airflows in the paint booth and a portable computer connected to the airflow sensor for collecting data from the airflow sensor. The reference, if modifiable, fails to teach or suggest the combination of a portable advisory system for balancing air flows in a paint booth including a portable airflow sensor to measure airflows in the paint booth and a portable computer connected to the airflow sensor for collecting data from the airflow sensor with the computer having a first database of optimal control settings for storing information of last optimal commands and last optimal sensitivity model, a second database for storing information of air velocities and VFD/damper commands, and a sensitivity model for the paint booth. as claimed by Applicants.

The claimed invention is novel and unobvious because the portable advisory system uses a handheld acoustic anemometer or airflow sensor to measure airflows in a paint booth that are output to a laptop/palmtop computer that collects data and guides the operator through the process of adjusting multiple fan speeds and duct dampers to achieve the desired airflows in the paint booth in a relatively short time interval without adding costly automation equipment. The Examiner has failed to show how the prior art suggested the desirability of modification to achieve Applicants' invention. Thus, the Examiner has failed to establish a case

of prima facie obviousness. Therefore, it is respectfully submitted that claim 1 and the claims dependent therefrom are allowable over the rejection under 35 U.S.C. § 103.

Obviousness under § 103 is a legal conclusion based on factual evidence (In re Fine, 837 F.2d 1071, 1073, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988), and the subjective opinion of the Examiner as to what is or is not obvious, without evidence in support thereof, does not suffice. Since the Examiner has not provided a sufficient factual basis, which is supportive of his/her position (see In re Warner, 379 F.2d 1011, 1017, 154 U.S.P.Q. 173, 178 (C.C.P.A. 1967), cert. denied, 389 U.S. 1057 (1968)), the rejections of the claims are improper. Therefore, it is respectfully submitted that claims 1, 4 through 9, 11, and 12 are allowable over the rejections under 35 U.S.C. § 103.

Based on the above, it is respectfully submitted that the claims are in a condition for allowance or in better form for appeal. Applicants respectfully request reconsideration of the claims and withdrawal of the final rejection. It is respectfully requested that this Amendment be entered under 37 C.F.R. 1.116.

Respectfully submitted,

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Date: May 5, 2004

Attorney Docket No.: 0693.00196
Ford Disclosure No.: 199-0287